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ABSTRACT

These four papers focus on a consideration of the costs of evaluation, as examined in the Evaluation Use Project. "A Framework for Estimating Evaluation Costs," by Marvin Alkin and Brian Stecher, considers overall theory and draws on previous research in determing evaluation costs. The concepts are extended to develop informal quidelines for a two-stage cost estimate process. The succeeding papers present actual case studies of the cost estimate process in three different evaluation contexts within local school districts. "The Cost of a District-Wide Testing Program," by N. James Myerberg, identifies the specific applicable cost parameters and suggests a method to compare testing across school districts. "The Incremental Cost of Conducting a Summative Evaluation of a Special Education Program From an Existing Data Base," by William T. Denton, examines a computerized system. "The Cost of a School Level Needs Assessment," by Floraline Stevens, discusses cost estimates according to school size and staff familiarity with the process. The question of assigning value to the extensive time expenditures required in the procedure is examined. Each paper proposes a high and low cost alternative to the evaluation procedure and examines the differences between options. (CM)

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EVALUATION USE PROJECT

Theoretical Issues in the Cost of Evaluation

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Project Director

U.S. DEPARTMENT OF EDUCATION
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INTRODUCTION

This series of papers represents the November 1982 deliverable for the Evaluation Use Project of the Center for the Study of Evaluation. These papers focus on a consideration of the costs of evaluation.

The papers are organized first by an overall theoretical framework for considering evaluation costs. This paper, written by Marvin Alkin and Brian Stecher, draws on previous research in the area of determining evaluation costs and then extends these cost notions to develop informal guidelines for costing out a particular evaluation study.

The three succeeding papers go on to present actual case studies of the application of these costing guidelines to three different evaluation contexts within local school districts. The first paper, by N. James Myerberg, presents a costing exercise relative to a large-scale, district-wide testing program. Myerberg identifies the specific cost parameters applicable to a testing program and goes on to suggest a method for using this costing model to compare testing costs across school districts.

The second paper, by William T. Denton, discusses the costs associated with the use of a computerized information and reporting system for a district-wide special education program. The costs of using a computerized system as compared to a traditional manual data tracking system are outlined. Finally, Denton reviews the overall cost-effectiveness of computerized data systems.

The final paper, by Floraline Stevens, looks at the costs of performing a school-level needs assessment in a large size metropolitan

school district having widely varying school enrollments. Each step of the needs assessment process is costed out according to the size of the school site involved and the familiarity of school staff with the needs assessment process. The paper also examines the question of assigning value to the extensive time expenditures required for this type of evaluation procedure. Stevens concludes with guidelines for self-determination of evaluation costs through decisions made about the depth of information required, the nature and extent of the personnel involved and the use of data processing.

Taken as a whole, these four papers provide a sound theoretical framework for estimating evaluation costs and provide some carefully developed examples that will serve as baseline data for the growing discussion of the costs of education.

A FRAMEWORK FOR ESTIMATING EVALUATION COSTS*

Marvin C. Alkin
Brian Stecher

Center for the Study of Evaluation
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Introduction

In an era of declining educational budgets, school districts have been forced to examine expenditures with an ever more critical eye. Not only are "frills" feeling the sharpness of the budget-cutting axe, but many previously "essential" services are being reduced as well. Given this prevailing climate, evaluators would be short sighted if they failed to examine thoroughly the cost of evaluation.

Most people have a "common sense" notion that equates program costs with dollars appearing on a ledger sheet at the end of the life of a program, accounting costs. But economists remind us that such a conception of costs is quite narrow. As Levin (1975) explains, "The explicit expenditures associated with any particular course of action represent only a partial measure of the total costs." For example,

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client time has a value that ought to be considered in appraising the total social costs of an activity. Similarly, the time teachers contribute while administering a test and the time students spend taking a test are parts of the total cost of the evaluation. Levin (1975) stated it this way--"In this sense the term 'costs' refers to the monetary value of all the resources associated with any particular action, and their value is determined by their worth in the most productive alternative applications." In Haller's (1974) words, "This notion of costs as benefits foregone--opportunity costs--provides an alternative starting point for anyone concerned with costs in educational program evaluation."

In some instances, however, dollars may be an appropriate measure of the opportunity costs of a given resource. To paraphrase Haller, when we use money as a measure of evaluation costs, we are assuming that the dollar figure will serve as an adequate measure or description of the resources required and the value of the programs foregone. While we may choose to make this simplification, we should recognize that it is a simplification. As Haggart noted (1978), "We are using costs as a somewhat abstract, but common or universal measure of the nature and quantities of the resources required for a project. We are mostly concerned with the costs as measured by using standard prices for the same resources." This simplifying assumption seems appropriate since this symposium has a different purpose--to examine the

range of costs of specific evaluation activities as they might be conducted by a typical school district evaluation office. From this exercise we hope to derive some baseline figures that have comparative value for other school evaluation professionals.

Literature on the Cost of Evaluation

Few, if any, published articles present cost data for evaluation activities, even though costs of evaluation are prominently mentioned in the literature. Scriven's reference (1974) to "cost free" evaluation, for example, implies that evaluations should more than pay for themselves in the benefits they provide to programs, yet there are no suggestions as to how these evaluation costs should be calculated.

The Standards for Evaluations of Educational Programs, Projects, and Materials, developed by the Joint Committee on Standards for Educational Evaluation include a statement relating to the costs of evaluation: "The evaluation should produce information of sufficient value to justify the resources expended." The guidelines clearly indicate that one should thoroughly investigate costs and benefits of evaluations before deciding to do them and that the evaluator "conduct evaluations as economically as possible." However, they offer no definition of what amounts or percentages should be spent for evaluation or what basis should be used for making cost allocations within the evaluation budget.

There are some informal guidelines for how much evaluation should cost in terms of the overall program budget--and they vary widely. Rusnell (1979) says, "Ten percent of program cost is sometimes suggested for use in evaluation." One source of this "common sense" guideline is undoubtedly the prescription in the early 1970s that 10 percent of LEA Title VII project funds be allocated for evaluation and program audit activities. (To be precise, eight percent was set aside for evaluation and two percent for program audits.) Another commonly suggested practical criterion is to allocate three percent of a program's budget for evaluation. Abramson and Wholey (1981) report that HEW evaluations were largely funded from one percent set aside funds earmarked for evaluation in the authorizing legislation of national programs.

Goldman (1980) presented a functional analysis of the New York City Board of Education budget for the fiscal year 1979-1980. Planning, Testing, Research and Development Services received only .7 percent of the total budget of the school district during that year. Breaking the services down further, Educational Evaluation received .2 percent of the funds. In a 1977-78 study of large school districts, Webster and Stufflebeam (1978) ...ed an average expenditure of $6 per pupil for evaluation and associated activities (testing and research). This would appear to be fairly similar to the Goldman findings as a percentage of total LEA budget. Clearly the percentage allocated to evaluation would

be greatly dependent upon such factors as size, cost, and type of program. However, these relationships have not been studied.

Drezek et al. (1982), in a survey of 55 LEAs and 14 SEAs, examined the evaluation costs as a percentage of total program costs for program proposals. They found a median low of 1.5% to a median high of 5.5% across the districts studied. Furthermore, their respondents recommended "a 4-8%, sliding scale, program cost-allocation for evaluation."

Be it one percent, three percent, or 10 percent of new outlays for evaluation, such rules of thumb for total evaluation costs offer little useful information toward developing a framework to analyze the costs of various program activities. A search of the relevant literature uncovers several studies potentially relevant to the topic of evaluation program costs by category.

Lai (1978) examined empirical cost data on 14 completed evaluations whose budgets ranged from $400 to $3 million. He hoped to obtain "ballpark estimates of costs expected in relation to sample size, number of schools involved, number of instruments and items developed and used, report length, and project staff time." Unfortunately the evaluations he examined varied so greatly on these dimensions as well as in subject matter, duration of the evaluation, and the type of organization conducting the evaluation, that little useful information could be derived. And as Lai concluded, "It was

not possible to come up with easily used categories that related evaluation parameters to cost." The data might be of use to evaluators as representative examples if more information were offered on the scope of each evaluation.

Paisley et al. (1978) examined the costs of educational extension services. They developed a model of normative cost estimates for variously configurated extension services. Evaluation was one of eight functional areas of activity included. The total program budget projected in their model was $250,000 and 6.2 percent was budgeted for evaluation in six cost categories: labor--$9,800 (62.9%); material--$1,000 (6.4%); services (contracted)--$1,200 (7.7%); travel--$600 (3.8%); occupancy--$1,000 (6.4%); general administration--$2,000 (12.8%); for a total evaluation cost of $15,600. One should not generalize too far from these estimates, because educational extension services have certain characteristics that are very different from other educational activities. Paisley and his colleagues anticipate wide variations in cost estimates within educational extension systems attributable to changes in the type of activity; the same comment is valid for variations that will occur between extension services and other educational organizations.

Estimating Evaluation Costs

The review of literature reinforced our initial impression that little had been done to examine the range of costs for different types of evaluation activities. Similarly, there

was little in the literature that could be used as a direct guideline for developing an evaluation cost estimation framework--particularly as it relates to evaluation in school district settings.

Assumptions. There are, however, sources of guidance for costing evaluations. The principles that have been expounded for assessing the costs of other programs can be used to examine evaluation activities themselves. Most of the books on program budgeting in schools have chapters in them about costs. Haggart (1979), for example, has provided an excellent description of an approach for educational program cost analysis. This book provides basic ground rules for costing; one only needs to substitute "evaluation" for "project."

There are ways, of course, that evaluations are different from projects in their costing implications. The elements to which costs are attached are different for evaluations than for programs generally. In an evaluation, we have an entity which, depending upon the way in which it was funded, may or may not be partially internal to the school organization and partially external. If the evaluation is performed solely by an internal district evaluator, then cost allocation procedures are straightforward. But, if the evaluation is performed by an external evaluator, then there are both external costs and associated internal costs. The extent to which this is complicated depends upon the procedures

employed to deal with external costs and, more specifically, on the level of detail desired. We will assume that external evaluator costs are under the category of contracted services and will not attempt to break them into other categories. While an understanding of the allocation of externally contracted evaluation services is important for other purposes, in this paper we will accept this simplifying assumption.

The very specific context for our work in this symposium allows us to make some further simplifying assumptions about costs. We can also assume that the district has an existing administrative structure and evaluation capability. We do not have to start from scratch and include the cost of establishing an evaluation unit, installing telephones, or erecting classrooms; set up costs and other fixed costs have already been covered. Cost estimates may be based on the assumption that existing evaluation offices are operating at their usual level and that one additional project is being undertaken. Thus, we suggest considering only marginal costs.

A consequence of this assumption is that only the additional costs related specifically to the new evaluation activity will be included in estimates. That is, there should be no indirect charges in the cost estimates. As Haggart (in press) directed:

> In estimating the cost to be used in (conducting the evaluation), all resources needed for the implementation and operation of the evaluation are included... The cost of resources that do not change because of the presence of the evaluation are not relevant.

Thus, for example, there will be no costs for acquisition of equipment unless one would be buying new equipment specifically for this evaluation. Similarly, there will be no costs for facilities that already exist, for building maintenance that is already taking place, or for other overhead charges unless the evaluation directly increases these activities.

As the previous quote from Haggart suggests, the resource requirements determine the cost of the evaluation. In fact, resource needs may be a more fundamental measure of the administrative impact of the evaluation than costs. (Costs only measure the local value of the resources, and this will vary from district to district.) Similarly, the resource requirements themselves derive directly from the scope or description of the evaluation--what is being done. This analysis suggests that.

After describing the scope and general nature of the evaluation, there are two steps which are fundamental to estimating the cost of evaluation:

1. Delineating the resources required to carry out these processes; and,
2. Assigning dollar values to these resources.

Resources must be specified precisely as a part of any costing exercise for several reasons. Haggart (1978) notes that there are differences between the cost of resources in different communities. One can either select to use local dollar costs or one can use resources as a standardized measure that approximates costs more generally. The choice

depends on the purpose for which one is making the cost estimate. Standard costs are appropriate if one is going to use the cost estimates to compare evaluation in different districts; local costs are critical if one is trying to determine whether or not a particular activity should be conducted in a particular site. It was easier for the participants in this symposium to use local costs. However, to insure that the results have wide applicability, each of the papers in this symposium will present both resource statements and present dollar values.

Cost Categories

Another element that must be standardized is the categories used for aggregating and reporting cost figures. Levin (1975) suggests five major categories of resources: personnel, facilities, material and equipment, other, and the value of client time and other client inputs. Each of these categories can be broken down into a number of subcategories. For example, personnel could be broken down into certificated personnel and classified personnel. Further subgroupings may yield greater detail but not necessarily greater accuracy.

The categories should reflect the inherent nature of the activity that is being analyzed. Sanders (1982) used 10 categories when he assessed the cost implications of the standards for program evaluation. Haggart et al. (1978) used only three categories. Our experience with educational

evaluation suggests that resources could be best grouped in the following seven categories:

1. Professional personnel (salaries and benefits together)
2. Clerical and secretarial personnel (salaries and benefits together)
3. External consultants
4. Materials, equipment, and supplies
5. Data processing
6. Facilities
7. Other

At this point in our understanding of evaluation costs our choice of categories must be somewhat subjective. For example, we separated data processing costs from materials and supplies because they are an essential part of many evaluations, and they are a service that often exists as a functionally distinct activity.

We have not included the value of client time and other client inputs on our resource list for several reasons. First, it is commonly assumed (though this may not be warranted), that the small disruption in the instructional program caused by testing and other evaluative activities has only minimal impact. Moreover, we are focusing primarily on direct dollar costs of evaluation and thus, as we have noted, this simplifying assumption is warranted.

Conclusions

Our purpose in this paper was to develop a framework that could be used for making estimates of the costs of

various evaluation services. We began with a general discussion of the nature of costs, and then have made some simplifying assumptions that seemed appropriate to the tasks of assessing the cost of educational evaluation in school districts. We offered a two-stage process for making evaluation cost estimates. One first specifies all the resources that will be involved in the evaluation, and then assigns values in terms of dollars to the various resources.

This brief costing paper was developed as a framework for guiding the three remaining papers in this symposium. Each of the three other panelists was asked to describe and then "cost out" a particular evaluation activity in their school district. As a final activity, we asked each to discuss the variability of their estimates. We hoped to do this by having each panelist propose a high cost alternative (both brief description and total cost) and a low cost alternative to the evaluation procedure described in the paper and analyze the key differences between these options.

We hope that this formulation proves to be useful as a baseline for an analysis of evaluation costs generally and for the papers of this symposium.

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The Cost of a District-Wide Testing Program

N. James Myerberg

I. Introduction

Most school districts today have some type of district-wide testing program. Such testing programs have to a great extent been influenced by the accountability movement in education. A school district's commitment to a testing program is generally reflected by the amount of money put into the program. This paper will discuss the elements of a model to identify a particular district's commitment to its testing program and will provide a method for using this model to compare costs/commitment across school districts.

Scope and Sequence of a Systemwide Testing Program

The Montgomery County (MD) Public Schools conduct annually an extensive district-wide pupil testing program. This effort requires a significant commitment in terms of personnel and support costs which need to be systematically included in the district's overall budget. A method has been developed, therefore, to frame the cost parameters of the testing program in terms of district size, scope and sequence of testing, personnel required, and support services.

The systemwide testing program (95,500 students) consists of the administration of two tests: a nationally normed standardized test and a state developed minimum competency reading test. The

standardized test, the California Achievement Test (CAT), is administered each fall to all students in Grades 3, 5, 8, and 11. The minimum competency test, the Maryland Functional Reading Test (MFRT), is administered in October to all students in Grades 7 and 9. The MFRT is also administered to students in Grades 10, 11, and 12 who have not previously passed the test, and is administered again in May to students who still have not passed. Approximately 46,900 students were tested in this program during the 1981-82 school year. The breakdown of number tested by grade and test is shown below.

	Test	Grade(s)	Number Tested
	CAT	3	5,200
	CAT	5	6,600
	CAT	8	7,300
	CAT	11	8,100
	MFRT	7	7,600
	MFRT	9	7,700
	MFRT	10-12	1,900
Spring	MFRT	9-12	2,500

The testing office is responsible for implementing this program. Its functions can be grouped into four broad categories: planning and preparation for the program, orientation of administrative and teaching staffs, processing results, and reporting and explaining results. The resources needed to accomplish these tasks and the costs attached to these resources are described in the next section. It should be noted that the figures presented in this section can be considered as representative of the extent of the district's commitment to the testing program.

II. A Model for Deriving Testing Program Costs

Costs of the Systemwide Testing Program

The total direct cost of the systemwide testing program for the Montgomery County (MD) Public Schools for the 1981-82 school year was $162,500. This cost is broken down into several budget categories listed below. The listing is followed by a description of the resources (and their attendant cost implications) that fit into each category.

A. Budget

Cost Category	Dollar Amount
Professional personnel (including benefits)	115,500
Clerical and secretarial personnel (including benefits)	23,000
External consultants	4,000
Materials, equipment, and supplies	15,000
Data processing	5,000

B. Description of Resources

Professional Personnel. The Coordinator of Testing supervises all aspects of the program. He has three assistants whose chief responsibilities involve preparation of orientation materials, processing results, and helping to prepare reports of the results. During the fall and winter all of these people work full-time on testing. In spring and summer, the testing activity lessens and they become involved in other activities of the Division of Instructional Evaluation and Testing.

In general, the more professional staff are hired as on-site district personnel, the more services are provided to district staff

and students, and the better the training provided to district staff in the administration of tests and the use of test results. A smaller district commitment in terms of professional personnel usually leads to the hiring of external consultants, which in turn is reflected in a different budget category. If external consultants are not hired, district staff will generally lack the required training/expertise/assistance in the administration of tests and in interpreting the results.

Clerical and secretarial personnel. More than half of the cost in this category results from the necessity for quality control of answer sheets. This process involves a review of every answer sheet before scanning, and a subsequent correction if it appears that sheets may be incorrectly scanned because of such things as light marks, poor erasures, or incorrect student identification information. Other costs in this category arise from the need for secretarial help for production of orientation materials and reports; data tabulation, often in response to unexpected requests from the Board of Education or Superintendent; and packing, distributing, and pick-up of test books.

If quality control is not provided for in this budget category, approximately five percent of student scores may be adversely affected. Inaccurate scores could have serious educational consequences for the students who are thus misidentified.

External consultants. This cost comes from the use of consumable test books in Grade 3, which have to be scanned by an outside scoring service. A district which has an adequate professional staff will not need to expend much in this cost category.

Materials, equipment, and supplies. The major cost in this category is for CAT test books. Consumable books have to be purchased each year. Non-consumable books represent a one-time purchase but the cost has been divided across the expected number of years the books will be used. In this case the expectation is six years. Another one-time cost is for support materials for the CAT. These materials include manuals describing the test and extra examiner's manuals needed because the one per 35 test books provided by the publisher is not sufficient. The cost of the support materials has also been divided across six years. There is no cost for the MFRT because it is produced and distributed by the state education department.

The other items in this category are individual student report forms for each test, and adhesive labels and letters for use in reporting results to parents.

Data processing. This cost is for a programmer who serves as a trouble shooter if there is a problem in processing of tests. This category does not include costs for things such as computer operators and computer paper since they do not represent additional costs for the data processing department. It also does not include the cost of originally developing the test scoring system, since inclusion of this cost would greatly increase the total cost of the testing program and provide a misleading estimate of the annual cost of the program.

A "debugged" system of data processing which is under local control provides a district with greatly increased flexibility, since report formats can be altered or designed to provide information of specific district interest/importance.

III. A Method for Comparing Testing Costs Across School Systems

Any comparison of costs across school systems is, obviously, confounded by differences in the cost of living in the areas served by these districts. While the material costs cited above will remain constant across the country, the personnel-related costs will vary across districts. A method for standardizing the cost of a testing program, or other evaluation activity, would be to relate the program cost to each local system budget. The budget will, to some extent, reflect the local cost of living and, therefore, tend to cancel out the effect of different costs of living. Since a testing program can be related to a specific number of students, the cost per student can be determined. This cost can then be compared to the total cost per student in the system. The percent of this total represented by the testing cost can serve as the comparative index. In the case of Montgomery County, with about 95,500 students, the per student testing cost is $1.70 compared to an overall student cost of $2,982. The testing cost is thus determined to be about one-twentieth of one per-cent percent of the total.

THE INCREMENTAL COST OF CONDUCTING A SUMMATIVE EVALUATION OF A SPECIAL EDUCATION PROGRAM FROM AN EXISTING DATA BASE

William T. Denton

Introduction

The Dallas Independent School District (DISD) conducts a large Special Education Program with ancillary services (9244 students annually). The DISD is responsible to both Federal and State agencies for evaluation of services provided under applicable laws (especially PL 94-142). To facilitate the gathering and reporting of information, as well as to provide program evaluators with easy access to student/program data, an extensive computerized data base has been developed and implemented across the entire system. This paper reviews the capabilities and functioning of this computer data base, and discusses the cost-effectiveness of using the computerized system as compared to a manual system for providing the same information.

1. Description of the Computerized Data System

A. Objectives. The Computerized Information System (CIS) consisted of the following three systems: (a) The Special Education Data Base, containing demographic data files on Dallas Independent School District (DISD) special education students and faculty, (b) The Computerized Monitoring and Retrieval (CMR) System, used as a means to access and store appraisal/placement data when students enter the special education process, and (c) The Computerized On-Line Transportation (COLT) System, allowing storage and retrieval of information regarding special education

transportation services. The basic function of the 1980-81 Special Education CIS was to build onto the existing computer systems while continuing to provide information to special education administrators. Variations of student and faculty rosters, current to the week of distribution, were given to special education coordinators, facilitators, diagnosticians, home/school coordinators, psychologists, and speech pathologists on a six-week basis.

A major objective of the CIS was the generation of reports, necessary for funding purposes, for the Texas Education Agency (TEA). The PL 94-142 Child Count reported the total number of children between ages 3-5 and ages 6-21 by handicapping condition. The Elementary and Secondary School Civil Rights Survey tallied the total number of special education students by age, instructional arrangement, and handicap. Finally, statistical tabulations essential for the Annual Special Education Statistical Report to the TEA were generated by a set of computer routines developed by CIS personnel.

The CIS was utilized also to provide information requested by management. The types of information requested usually dealt with totals and percentages of special education students in terms of ethnicity, subdistrict, age, or handicap. Mailing labels were also computer-generated, which economized on secretarial time when letters were sent to staff or parents.

The CIS also provided on-line computer storage and retrieval of appraisal/placement events. Computer terminals, placed in subdistrict special education offices, enabled immediate access to student information such as dates of reviews, staffings, and

medical exams. Finally, on-line capability to add or change information regarding special education transportation services was provided.

B. Data Collection and Storage. The information for the data base was gathered by speech pathologists (N=13) and case managers (N=73). The information collected by case managers, also known as diagnosticians, psychologists, and home/school coordinators, primarily consisted of student demographic data. The information was recorded on forms and sent to a central office on a weekly basis. When a student was added to a special education program, the student's name, identification number, school, classroom unit, handicap, and instructional arrangement were recorded. All variables, excluding the name, were written in an alpha or numeric code. The same method was used when a student was dropped or a change was made on the student's record. After the forms were validated, the data were keypunched and entered into the computer file.

The CMR data were entered through remote terminals by area administrative clerks (N=14). First, the data were sent to the area office on appraisal forms completed by the case managers. The clerks input the data on the terminal after recording the information on Case Management Profile Forms.

Information for the COLT System was provided by coordinators and facilitators who sent transportation updates to the central administration building on a daily basis. Updates were entered directly through a remote terminal stationed in the special education office.

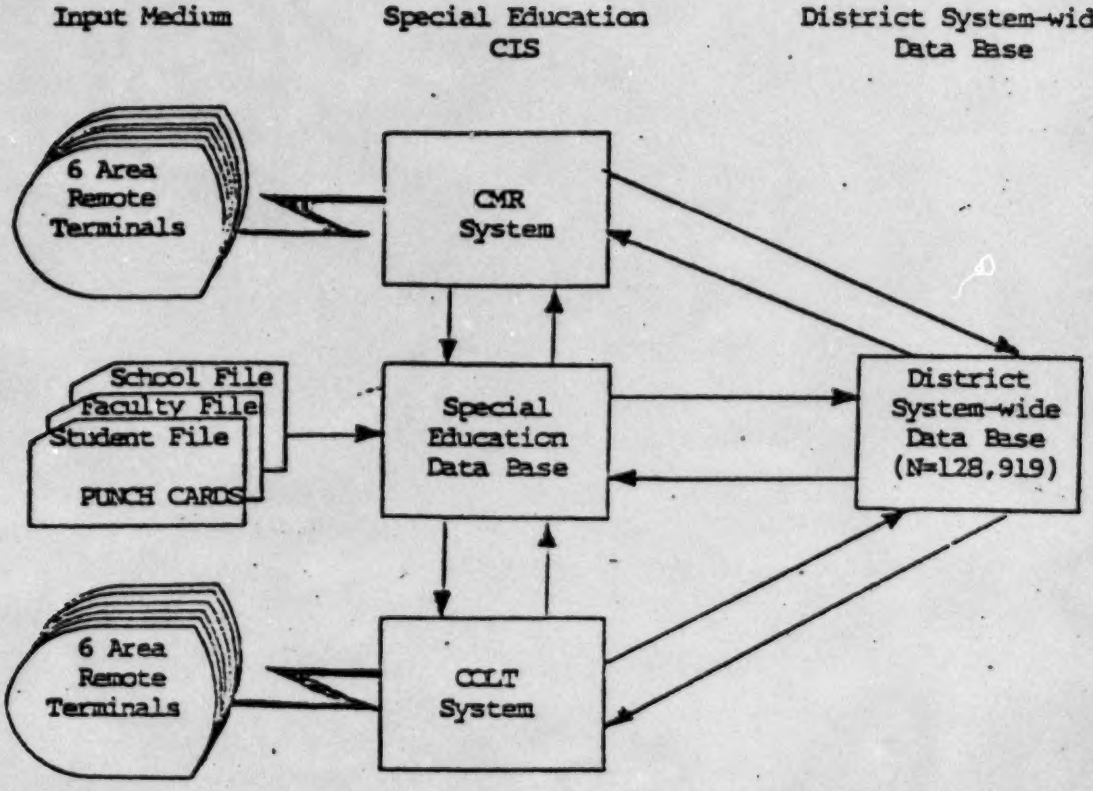

Figure 1: Special Education Computerized Information System

Special Education Data Base

Student File

1. Student DISD identification number.
2. Student name.
3. Attending school location.
4. Teacher unit number of speech pathologist number.
5. Disposition code.
6. Instructional arrangement code.
7. Primary, secondary, and/or tertiary handicap code.
8. Student services number.
* 9. Home-school location code.
10. Speech problem type.
11. Speech handicap severity rating.
12. Number of speech sessions served.
13. Case manager number.
14. Special flags for students affiliated with Project Zero Reject, Project KIDS, Project SPICY, Project SEED, the Multiple Careers Magnet Center, or the Assessment Center.
15. Special flags indicating students who are expectant mothers, receive special funding, or are severely profoundly handicapped.
16. Special flags for students in vocational educational programs.
17. Related services (i.e., occupational therapy or physical therapy).
*18. Home address.
*19. Phone number.
*20. Grade.
*21. Date of birth.
*22. Sex.
*23. Ethnicity.

Faculty File

1. Area location code.
2. Position type code (i.e., psychologist, teacher, etc.).
3. Faculty identification number.
4. School location code.
5. Supervisor identification number.
6. Diagnostician identification number.
7. School grade span.
8. Organizational arrangement code (i.e., DISD or non-DISD campus).
9. Service type code (i.e., resource room, self-contained unit, etc.).
10. Itinerant location codes.

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*Data initially retrieved from the System-wide file.

School File

1. School TEA budget number.
2. School name.
3. Area location code.
4. School box number.
5. School grade span.

The information on the CMR System contained the following:

Computerized Monitoring and Retrieval System

1. Student DISD identification number.
2. Student name.
3. Case manager code.
4. Student services number.
5. Reporting school.
6. Referral source.
7. Dates for PPC (Pupil Personnel Committee) documentation and completion.
8. Date for parent permission of assessment.
9. Date for scheduled assessment.
10. Examination dates (i.e., vision, auditory, psychological, educational, physical, and sociological exams).
11. Dates for scheduled and completion of staffing.
12. Indication of parent's attendance at staffing.
13. Results of staffing (e.g., Was the student eligible for special education?).
14. Date of parental approval for service.
15. Location of service initiation.
16. Dates of area and central ARD (Admission, Review, and Dismissal) reviews.
17. Results of reviews (e.g., Was ARD Committee in agreement?).
18. Dates of quarterly IEP (Individualized Educational Program) reviews.
19. Date and result of end-of-year review.

Finally, the data collected for the COLT System included the following:

Computerized On-Line Transportation System

1. Student DISD Identification number.
2. Student name.
*3. Pick-up address.
*4. Home phone number.
*5. Sex.
*6. Ethnicity.
*7. Date of birth.
8. Student services number.
9. Transportation location.
10. Transportation funding source.

*Retrieved from System-wide Data Base.

Computerized On-Line Transportation System - Cont'd.

11. Transportation status code (i.e., parent request, transportation started, or transportation stopped).
12. Bus route number.
13. Transportation eligibility reason (i.e., use of wheelchair, braces, etc.).
14. Indication of the necessity of a special lift.
15. Delivery address.
16. Work phone number.

C. Reports Generated. Table 1 categorizes the frequency and types of reports generated on a routine basis. Faculty, student, and transportation rosters were generated every six weeks. Summary statistics on the CMR System were generated every month. Information was reported annually to TEA, and data necessary for the scheduling process were printed also on an annual basis.

Information from the CIS was requested on an ad hoc basis on 162 different occasions during 1980-81. The number of ad hoc requests increased by 14 percent when compared with the 1979-80 requests (N=142). The time needed to complete a request ranged from 15 minutes to four days. The average response time for a request was 2.10 hours.

Professionals needing information from the CIS ranged from assistant superintendents to subdistrict administrative clerks. The number of ad hoc requests from central staff (N=66) increased by 20 percent when compared with 1979-80 central staff requests (N=55). This group accounted for almost half of the ad hoc requests during 1980-81. There was a 30 percent decrease in the number of requests by the Research and Evaluation staff from 1979-80 (N=42) to 1980-81 (N=32). Another comparison of 1980-81 to 1979-80 revealed that a greater range of people requested data. The 1980-81

Table 1

Types and Frequencies of Routine Data
Reported from the Computerized Information System

Type of Report	Schedule for Generation
CMR Summary Statistics	Monthly
Faculty rosters	6 weeks
Student rosters	6 weeks
Transportation rosters	6 weeks
Child Find Report	Quarterly
Elementary and Secondary School Civil Rights Survey	Annually (October)
P. L. 94-142 Child Count	Annually (December)
Annual Special Education Statistical Report to the TEA	Annually (June)
Letters of notification to parents about special class placement and transportation authorization, if applicable	Annually (June)
Computer punch cards of students necessary for class scheduling process	Annually (June)

school year marked the first year of requests by home/school coordinators, psychologists, and school personnel such as registrars and counselors.

D. Categories of Information Use. Utilization of CIS information included several major areas: class scheduling, enrollment projections, ad hoc information requests, and on-going information retrieval. The following summarizes CIS utilization in each of these areas during 1980-81.

A computerized method of class scheduling for the 1981-82 school year was implemented in the summer months. The method, which minimized the work time of special education management considerably, was executed with the close cooperation of the coordinators.

A set of programs was updated from 1979-80 to project next-year school locations for special education students based upon their neighborhood elementary schools and the District-wide school feeder system. The enrollment projections were designed to help management allocate class units relative to anticipated student enrollments in the annual budgeting process of the District.

Subdistrict personnel were able to access current information on computer terminals placed in the area offices. Two programs, Tabulator and Inquiry, were specifically designed for users with minimal data processing background. These programs provided accurate and current statistical and demographic information on the special education population.

The additional functions of and revisions to the 1980-81 CIS were:

1. Collection of related services and vocational information by case managers on an on-going basis.

2. Collection of data on expectant mothers on an on-going basis.

3. Generation of new software necessary for:
   a. The Computerized On-Line Transportation System.
   b. The Computerized Monitoring and Retrieval System.
   c. The student directory roster.
   d. The Extractor and Tabulator programs.

4. Addition of the multiple updating feature on the CMR System which allowed all subdistricts simultaneous updating of the System.

II. Determining the Costs of the CIS

A. System Costs. The cost of CIS operations was ascertained by dividing the system into six major functions and charting the hour costs utilized to perform each. Table 2 indicates the total number of days spent on each CIS function given two computer programmers, one assistant evaluator, one principal evaluator, one secretary, and one data technician. Assignment of cost to each function was achieved by totalling each employee's daily salary multiplied by the number of days utilized for each function.

Keypunch and computer time costs were not included in Table 2, but the cost incurred for keypunching totaled $1,502.48. A previously reported analysis of the costs of data processing revealed that, at least in a large school district which has computer capability, the costs for computer-prepared individual reports were less than those costs for reports which were manually prepared (Reisman, Holt, Kocsis, and Macy, 1979, p. 6).

When compared with the 1979-80 cost analysis, more time and money were devoted to software development, data collection, and

Table 2

Computerized Information System
Cost Analysis[a]

CIS Function	Total Days Utilized by Staff	Total Cost	Percent Total Cost
New software development[b]	257	$28,893.20	40.4%
Data collection	162	$13,781.50	19.3%
System maintenance	66	$ 9,143.10	12.8%
Special projects[c]	80	$ 8,558.70	12.0%
Routine report generation	59	$ 6,084.60	8.5%
Ad hoc report generation	46	$ 4,983.90	7.0%
Total	670	$71,445.00	100.0%

[a]Cost figures do not include computer time.

[b]New software was developed for the CCLT System, CMR System, and for data base improvements.

[c]Special projects included the class scheduling process, the development of an enrollment projection system, and the study of standardized test scores of special students.

system maintenance in 1980-81, while less time was utilized for routine report generation and special projects. Specifically, resources allocated for software development doubled in 1980-81 due to revisions to the CMR System and implementation of the COLT System. Adding the multiple update feature to the CMR, i.e., allowing all subdistricts simultaneous updating to the system, required 30 days of programmer time. More resources were alloted for data collection and system maintenance because of CIS expansion. Specifically, the three systems (CMR, COLT, and data base) were updated and maintained on a continual basis, whereas, in the past, only the data base was in full-time operation.

B. Evaluation-Related Costs

Size and scope of the evaluation. The State of Texas requires a rather thorough accounting of special education that culminates with a final evaluation report. the purpose of the evaluation is to account for District efforts toward meeting the mandate that every handicapped child shall have a free, appropriate education in the least restrictive environment.

Every year approximately 10,000 students are served in special education programs in the Dallas Independent School District. Extensive data are collected and stored on each student as described previously.

In addition to the student file, there are also files on faculty, schools, and interactive files for monitoring student assessment and placement as well as transportation. The annual state report is produced by analysis of selected factors within these files.

Required resources. The personnel involved in generating the annual state report include two computer programmers, two evaluators, and one secretary. Data processing is accomplished with one keypunch machine, one remote job entry facility, and seven terminals with modems. The main frame computer is a Borroughs 6700. Since all equipment is shared with other services and would be needed if special education did not use them, their cost is not included in this cost-analysis.

C. Cost-Effectiveness of the CIS

Dollar value of resources. The administrator responsible for preparing the annual report made a comparison of cost of preparing the report with and without the aid of a computer. This comparison is presented in Table 3.

Using dollars adjusted for inflation, the 1980-81 personnel costs for a computer-generated report had actually declined to $15,048, reflecting that District salaries had not kept up with inflation. Using the categories suggested for this presentation,

Table 3

Cost Comparisons

	Manually Prepared 1973-74 Annual Report	Computer Generated 1977-78 Annual Report
Number of reported students	9,193 students	9,244 students
Staff time expenditure for report preparation	4 months	1-1/2 months
Salary costs	$21,651	$15,514

the breakdown for the total cost of the annual report would be:

Professional Personnel	$13,898
Secretarial Personnel	1,150
Materials, Equipment and Supplies	165
Total	$15,213

One thing I would like to point out in closing is that personnel costs for all evaluations are greatly affected by inflation and personnel policies. Differences due to inflation can be accounted for from district to district. Personnel policies such as a promotion of a key staff member or salary differentials from district to district are much harder to reconcile. Further, at least in data-based evaluation, some of the costs attributed to the annual report should actually be prorated in some manner across all of special education. Certainly, these basic data are used by all.

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THE COST OF A SCHOOL LEVEL NEEDS ASSESSMENT

Floraline Stevens
Los Angeles Unified School District

The Los Angeles Unified School District has 713 school sites serving more than 540,000 students in grades kindergarten through 12. All of these sites, in some manner, go through the needs assessment process to determine what are instructional and educational needs of the students. However, the formally mandated needs assessment process only occurs in those schools that have special funds from federal or state agencies. The Compensatory Instructional Programs Division office in the district requires its more than 200 schools to go through a needs assessment each year. The state's over 300 School Improvement Program schools have the same requirements. The district's bilingual program, partially funded by the State of California, in many instances overlaps the compensatory educational programs or school improvement programs, and encompasses many more schools that require needs assessment information. Since there is not a slot in most budgets for a needs assessment, the costs involve a reallocation and redistribution of staff time and resources. Also, some of these costs are imbedded in the myriad of tasks of central administrative staff and evaluation staff as they provide support services that impact school staffs in the need assessment process.

Before analyzing the costs of a school needs assessment process, a review is in order. The needs assessment process is fundamental to program planning for it provides the basis for program development. The effectiveness of the planned program is dependent upon

the thoroughness of the assessment process. A needs assessment process involves collecting data and analyzing the data collected. (This analysis contrasts the current effects of the program on students--e.g., student achievement or student attitudes--with desired effects, and examining the program to identify what seems to be causing the observed effects.)

The steps in the needs assessment process generally include:

1. Identifying the goals (student oriented).
2. Ranking the goals.
3. Assessing the performance level of the goals.
4. Establishing the priority of each goal according to importance and performance.
5. Analyzing the reasons for the discrepancies among priorities, performance, and current program.
6. Identifying the goals for support components as they relate to needs of students. Then repeating steps 2-5.

When attempting to ferret out the costs of needs assessment at the school level, there are several components or functions that warrant examination. One way to determine cost is to tally the hours expended per task, multiplied by the average salaries of the persons involved in the needs assessment activities. A gross cost figure then can be given to the process. The components which I feel influence the school level costs are the following:

1. Size of school
2. Depth of information needed
3. New or continuing process (staff familiarity with process)
4. Availability of information

Size of School

In the Los Angeles Unified School District there is an administrative policy about off-norm persons allocated to serve a school. In an elementary school under 950 pupils, there will be only a principal assigned. If enrollment exceeds 949, one assistant principal is assigned; over 1349, two assistant principals, and over 1799, three assistant principals. Large schools can use the assistant principal(s) to coordinate the needs assessment activities and thus provide more time for the process. In those elementary schools with only one administrator, less time might be allotted because the principal's time must be devoted to other administrative tasks. In those schools with special funds to pay for nonteaching teacher positions, the needs assessment tasks can be given to a teacher rather than an administrator. This allows for a more in-depth needs assessment.

Depth of Information Solicited for a Needs Assessment

Most needs assessment "how-to" documents recommend that administrators and teachers, aides, students, parents, and the community be solicited for their input on the needs of a school. Based upon the size of the school and its human resources available, some of these persons may not be included. However, programs that are federally and state funded are mandated to include parents in the process. Student data can be limited by using student test scores and not the students' ranking of needs. Some schools may elect to use samples of various populations to rank the needs, while others will attempt to garner rankings from the entire population.

In most instances, it is the decision of the administrator in charge of the needs assessment to determine the depth of information to be gathered. However, in order to make sure that schools gather enough information to make program plans, the Los Angeles Unified School District's Research and Evaluation Branch has prepared a Needs Assessment Guide (1981) for schools to use when planning their needs assessment. The guide covers the following areas: (a) needs assessment process, (b) data from the instructional components, (c) assessment of program elements, (d) instructional support components/areas, and (e) random sampling.

Needs Assessment as a New or Continuing Process (Staff Familiarity With the Process)

Costs are determined a great deal by whether or not the needs assessment is a new or continuing process. A continuing process takes less time because the information in many instances has to be refined or only missing pieces of information supplied. The staff, in many instances, does not have to receive inservice training when the process is continuing. However, when the process is new to the administrator or new to teachers, much time must be spent explaining the reason for a needs assessment, the processes involved, and the plan to conduct the needs assessment in the school.

Availability of the Information

Those schools involved in the ongoing evaluation process would have an easier time conducting a needs assessment because many of the needs have already been discovered. Those schools not involved in such a process would have an extra step to perform--that is,

determining what are the discrepancies between planned outcomes and actual outcomes. Again, the need for the process to occur demands additional hours of work by school staff.

Typical Needs Assessment Cost for a Small School

In an attempt to determine costs of an actual needs assessment, an elementary school principal was interviewed for his perceptions of the costs to his school for a needs assessment. The school is Title I funded and has 700 pupils, 30 teachers, 55 educational aides, two teacher coordinators, and one principal. He estimates the costs for needs assessment in this manner.

Teachers. All teachers at a staff meeting review the programs and budgets. Then the teachers rank the needs. This takes one hour per teacher to perform this portion of the needs assessment. Thirty hours.

Educational aides. All aides go through the same process as the teachers. Fifty-five hours.

Principal and teacher coordinators. The principal attended an inservice training session in the summer on needs assessment for four hours given by the Research and Evaluation Branch. The principal and teacher coordinators prepared the assessment forms and data sheets about the school's programs and their budgets. In addition, they tallied all forms and recorded the results. Thirty hours.

Parent councils and community persons. Needs assessment forms were sent home to all parents and given to the members of the school

advisory council. In addition, forms were sent to community persons who might have an interest in the school. Over 350 forms were returned to the school. Three hundred fifty hours.

Results. A total of 465 hours were expended for the school's needs assessment. Of the 465 hours, 115 were reallocated from time that would be used by the school staff for other tasks. If the costs were to be generated into dollar values, there were five teacher days, nine aide days, and 8-1/2 administrator days. Parent/community hours would not be assessed as school costs other than the time needed to tally the forms. As previously stated, the average per hour paid to each employee classification could generate a gross cost figure for the total needs assessment process.

The costs of a needs assessment are great. If all hours are combined, a school month of time is allotted to the needs assessment process in a small school by Los Angeles standards. Obviously as the number of students and staff increase, the needs assessment costs will also increase.

In sum, the cost of a given needs assessment comes from the depth of information to be collected. If a needs assessment form is standardized across all schools, the depth of information is low but so is the cost. If ranking can be centralized through the use of data processing, the costs will also decrease. If, however, a school with a large number of teachers and aides is involved, and if students are also included in the needs assessment process, then the costs of the needs assessment as far as the hours expended are concerned increase tremendously.